

d) Remarks

Summary of the Office Action

Claims 1-9 are pending in the application.

Claims 1-6 have been rejected under 35 U.S.C. 102(e) as anticipated Macoviak et al. U.S. Patent 6,361,545 ("Macoviak").

Claims 7-9 have been rejected under 35 U.S.C. 103(a) as obvious over Macoviak.

Applicants' Response

The present invention discloses an apparatus for removing a vascular occlusion including a thrombectomy wire and at least one deployable wire that is expandable in a direction radially outward from the thrombectomy wire. As described in the specification at page 25, line 13 to page 26, line 9, and illustrated in FIGS. 10, in operation, the distal tip of the thrombectomy wire is used to pierce a vascular thrombus. The deployable wire then is deployed within the thrombus.

As described with respect to FIGS. 9 and at page 23, line 7 through page 25, line 12 of the specification, the deployable wire is coupled to the thrombectomy wire so that rotation of thrombectomy wire rotates the deployable wire. Once the deployable wire is deployed within the thrombus, the thrombectomy wire is rotated such that individual fibrin strands within the thrombus are wound about the deployable wire. The deployable wire then is retracted into the catheter with the thrombus.

Macoviak is directed to an aortic filter that may be used to capture emboli liberated during heart surgery or cardiopulmonary bypass. ***It has absolutely nothing to do with retrieving a clot from cerebral vasculature, much less doing so***

by organizing fibrin strands around a thrombectomy wire. Like the Bates reference cited in the previous Office action, Macoviak describes a blood filter, not a device for removing a vascular occlusion.

Specifically, Macoviak describes with respect to FIGS. 18-20 filter screen 244 coupled at its distal end to inner catheter shaft 240 by struts 238 and hoop 236. The proximal end of filter screen 244 is affixed to outer catheter shaft 250. As described in Macoviak, the filter screen is unfurled by rotating inner catheter 240 relative to outer catheter 250, as indicated by the arrow in FIG. 19. Contrary to the assertion at page 3 of the Office action, the proximal and distal ends of the "deployable wire (232)" are **not** affixed to the "guide wire (240)." Rather, as noted above one end of the filter screen is connected to inner catheter 240, while the other end is connected to outer catheter 250: the Macoviak device would be inoperative if both ends were connected to the same element, because there would be no way to unfurl the filter screen.

In view of the foregoing, applicants have amended claim 1 to recite that "the deployable wire is coupled to the thrombectomy wire **so as to prevent relative rotation between the proximal and distal ends of the deployable wire.**" Given even the extremely strained interpretation of the claim elements set forth in the Office action, Macoviak does not anticipate the claimed structure.

Macoviak also does not suggest the structure recited in amended claim 1. There also would have been no motivation in the prior art to modify the Macoviak device to affixed both ends of the filter screen to the catheter so as to prevent relative rotation therebetween, because it would render the device inoperative (it simply couldn't be opened).

Because amended claim 1 plainly distinguishes over the prior art of record, dependent claims 2-9 also patentably distinguish over the prior art for at least the same reasons.

In addition, however, applicant respectfully submits that the obviousness-based rejections set forth at pages 3-4 are improper. As discussed above, the Macoviak device is a blood filter that is used to strain free-floating emboli from the patient's blood. By contrast, applicants' invention is a thrombectomy wire and is used to remove an occlusion that is adhered to and occluding a vessel.

The Office action points to no motivation in the cited references as to why it would have been obvious to substitute an arrow-shaped filter screen into Macoviak. Moreover, such substitution would make no sense because the open end of the filter then would be narrower than the waist of the filter, thereby permitting emboli to bypass the filter screen. That applicant's specification suggests utility for a particular shape in the thrombectomy setting does not mean that such shapes would be even remotely desirable in the entirely different context of blood filters, as in Macoviak.

Applicants have added new claims 21-25 directed to further features of the inventive thrombectomy wire, which features are disclosed throughout the specification. New claims 26-35 include further details of the embodiment of FIGS. 9A-9C, and provide an alternative expression for the invention of claims 1-9 and 21-25.

CONCLUSION

In view of the foregoing, applicants respectfully submit that the application is in condition for allowance. An early and favorable action is earnestly requested.

Respectfully submitted,



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